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(71) Applicant

Stuart Harland Wright,
Heron Lea, Cleeton Lane, Skipsea, Driffield, North
Humberside

(72) Inventor

Stuart Harland Wright

(74) Agent and/or Address for Service

W P Thompson & Co,
Coopers Building, Church Street, Liverpool L1 3AB

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(54) Apparatus for cleaning and polishing shoes

(57) Hand-held apparatus for cleaning and polishing shoes comprises a polishing head (3) projecting from a housing (1) and a drive mechanism for oscillating the polishing head. The polishing head may be resiliently mounted on a plate 7 which is reciprocated transversely to the longitudinal axis of the housing by an electric motor via crank 13. An endless polishing cloth (19) which may be moved by roller (23) may pass over the polishing head. A polish applicator comprising a sponge mounted on the end of a plate may be pushed out of the housing by operation of lever (33) for application of polish to a shoe to be cleaned. In modifications, the apparatus may in addition to provided with an oscillatable welt-polisher (67, Fig. 4), and a suede brush (73, Figs. 4,5) for attachment to the polishing head.

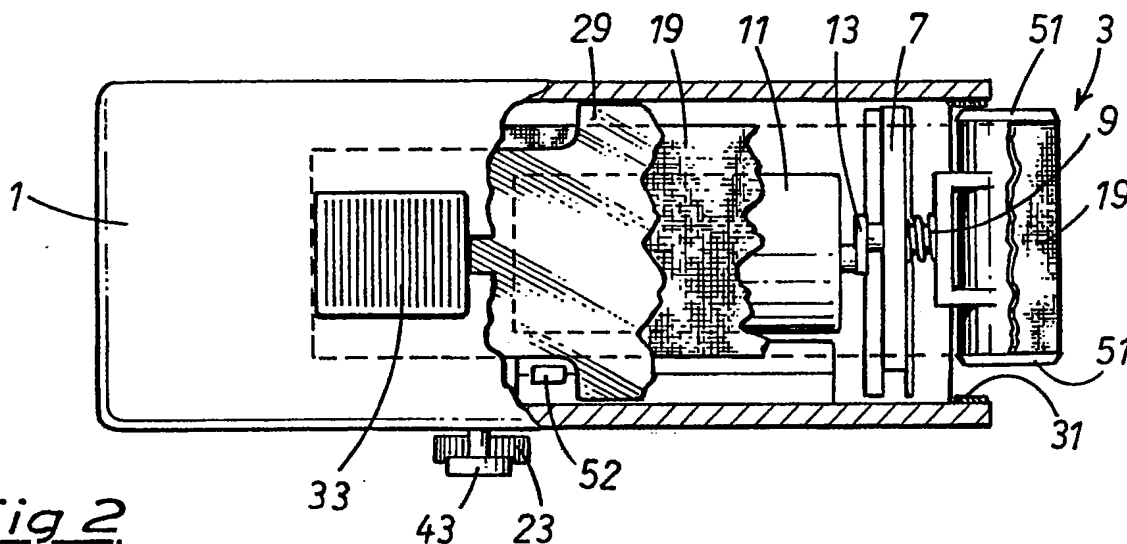


Fig 2

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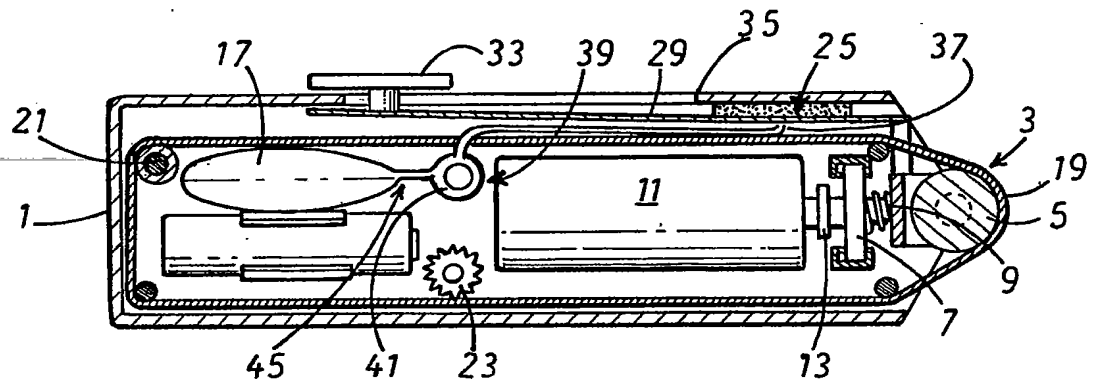


Fig. 1

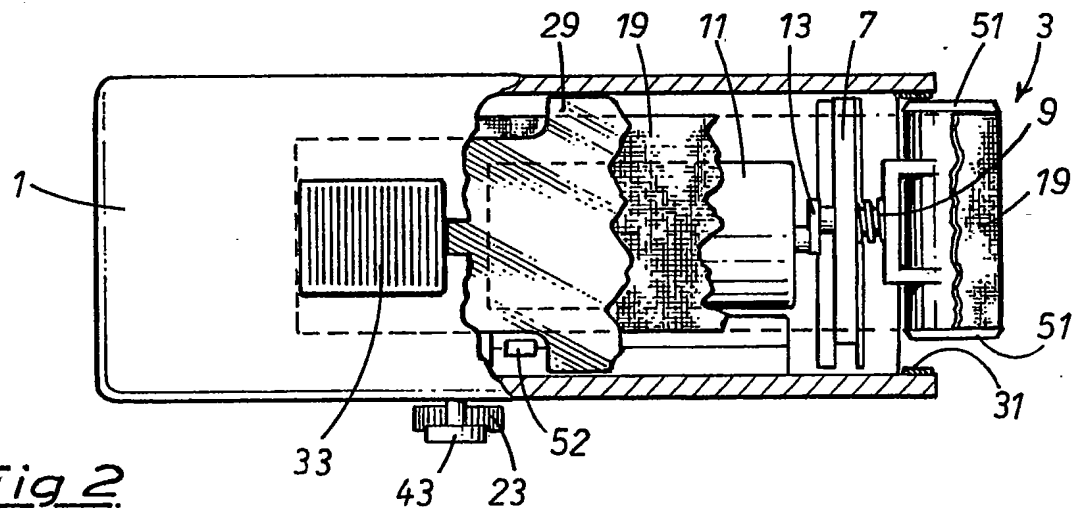


Fig. 2

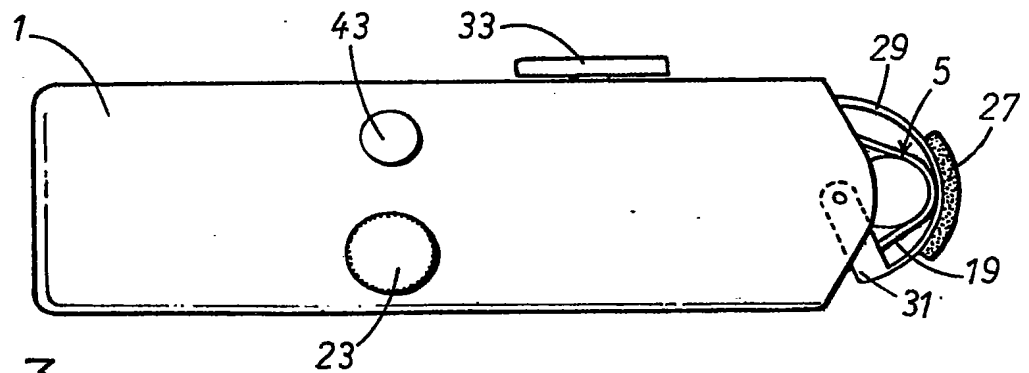


Fig. 3

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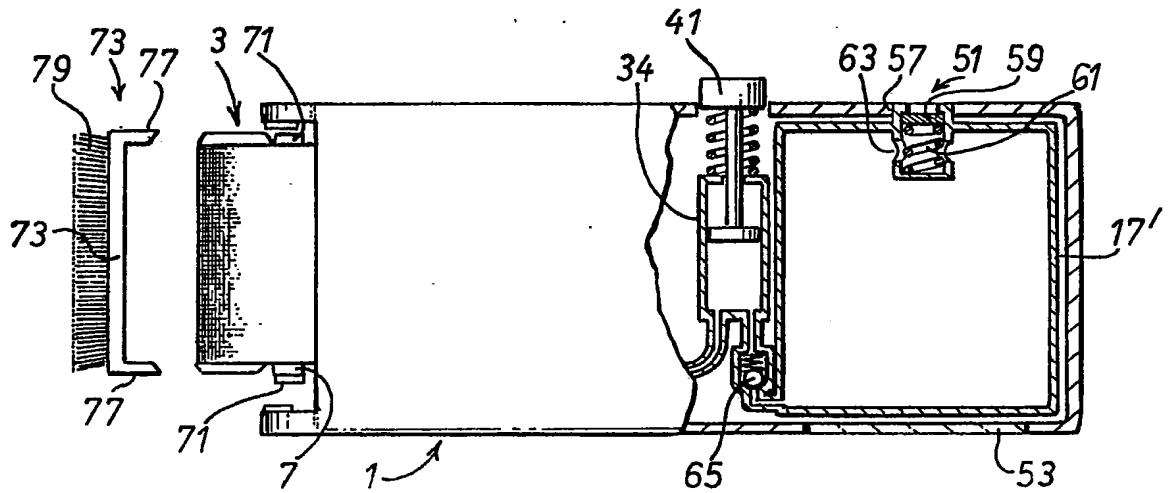


Fig 5.

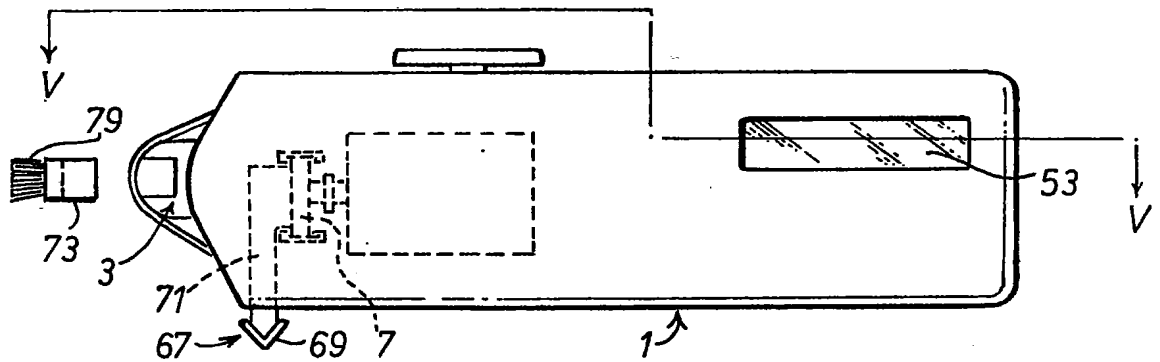


Fig 4.

SPECIFICATION

Apparatus for cleaning and polishing shoes

- 5 The present invention relates to shoe cleaning apparatus, and in particular to an electrically operated, hand-held shoe polisher.

An aim of the present invention is to provide self-contained shoe cleaning apparatus by means of which shoes and other foot wear can be cleaned and polished with relative ease. The term self-contained in this context means apparatus incorporating shoe polish, a polish applicator, and means for performing a polishing operation.

According to the present invention then there is provided apparatus for cleaning and polishing shoes or the like article comprising a housing having projecting from one end a polishing head, and drive means to oscillate the polishing head.

Preferably the apparatus further comprises a reservoir for polish, and means for dispensing the polish on to an applicator for application to the article to be cleaned.

The polishing head is at least semicircular in cross-section, but preferably cylindrical, and resiliently mounted onto an actuating plate which is reciprocable in a direction parallel to the longitudinal axis of the polishing head. An electric motor is employed to reciprocate the actuating plate by way of a crank. The electric motor is accommodated in the housing and is conveniently powered by batteries which are likewise accommodated within the housing. The spring mounting allows the polishing head to tilt relative to the actuating plate. The actuating plate is supported in the housing on bearings. A mains electricity connection may be provided.

A polishing cloth is conveniently arranged to pass over the polishing head. Preferably, the polishing head has a recess to receive the cloth and defining guide shoulders to thereby locate the cloth in the transverse direction and ensure that the oscillatory movements of the polishing head are transmitted to the cloth. The cloth is preferably an endless band which passes around the polishing head and one or more additional rollers or guides disposed within the housing. One of the rollers is rotatable by means of a knob which projects from the housing and which serves to advance the polishing cloth. The polishing cloth may be of a lint type of material, backed up with stiffening.

The applicator conveniently comprises a sponge like material secured to a flexible plate which is guided for movement over the polishing head and for withdrawal into the housing. The flexible plate has an actuating lever secured thereto and a pair of guide arms are secured thereto. The guide arms take their location on the housing at a point which is inwardly of the axis of the polishing head. Thus,

the flexible plate is constrained to move arcuately, radially outwardly of the polishing head and polishing cloth.

Conveniently, the flexible plate of the applicator, or the actuating lever associated therewith, is arranged to co-operate with a micro switch when the applicator is in its withdrawn position which initiates operation of the motor to reciprocate the polishing head. The wiring has been omitted. The motor is turned off when the applicator or its lever is moved from this withdrawn position.

A passageway connects with the sponge of the applicator. The passageway leads from a reservoir for the polish. A plunger is disposed within the reservoir and is operable by a piston rod which projects from the housing. Movement of the piston rod axially displaces the plunger and hence displaces polish down the passageway to the applicator. The plunger is spring loaded to return to its withdrawn position. The reservoir is provided with a connection for filling purposes. Preferably, the connection is permanently connected to a polish container which is accommodated within the housing. A one way valve between the reservoir and the container enables polish to be withdrawn from the container to fill the reservoir on the return stroke of the plunger. The container may be provided with an external filler connection.

The present invention will now be described further by way of example only with reference to the accompanying drawings; in which:

Fig. 1 is a longitudinal cross-sectional view of the apparatus according to the present invention;

Fig. 2 is a broken away plan view showing the resilient mounting of the vibrating head;

Fig. 3 is a side view with the polish applicator extended;

Fig. 4 is a side view of another embodiment of apparatus according to the present invention, and

Fig. 5 is a partially sectioned plan view taken on the line V-V of Fig. 4.

Referring to the drawings, the apparatus for cleaning and polishing shoes or the like article comprises a housing 1 which is generally rectangular and hollow. At one end of the housing is disposed a polishing head 3 which comprises a cylindrical member 5 mounted on an actuating plate 7. The polishing head is movably mounted with respect to the actuating plate although the amount of movement is limited. A spring 9 is interposed between the polishing head and the actuating plate 7 to bias it into a position in which it is disposed parallel to the actuating plate. That is to say, the axis of the cylindrical polishing head 3 is parallel to the plane of the actuating plate 7. The plate 7 is mounted for sideways movement with respect to the elongate axis of the housing. The plate 7 is mounted on bearings and is reciprocable by means of an electric

motor 11 driving through a crank 13. Conveniently, the motor 11 is offset in the housing. Disposed rearwardly of the electric motor and hence remote from the polishing head 3 are the batteries 15 to power the electric motor, and a container 17 for polish.

A polishing cloth 19 passes over the polishing head 3 and is in the form of an endless band which is accommodated within the housing and surrounding the electric motor, batteries and polish reservoir. The polishing head has transversely spaced guide shoulders 51 defining a recess within which the polishing cloth is received and which locates the cloth transversely on the polishing head. The shoulders are preferably formed by lugs disposed on the cylindrical head where the cloth merges tangentially with the head and extending through approximately 180°. A polishing cloth guide 21 is disposed at the opposite end of the housing to the polishing head 3. A roller 23 is disposed within the housing intermediate the opposite ends and adjacent one side of the housing. It is journaled for rotation in the housing and is provided with longitudinal ribs for co-operating engagement with the polishing cloth which passes between the roller and the housing. The roller 23 is rotatable by means of a knob projecting from the housing. Rotation of the roller serves to advance the polishing cloth. It is preferred that the cloth is supplied in a length and fitted around the polishing head and rollers and the opposite ends then secured together. Conveniently, one side of the housing is removable to gain access to the interior to allow the polishing cloth to be fitted in position.

In one embodiment a separate open ended casing is provided into which the other components with the endless polishing cloth therearound are received, such that the polishing head protrudes from the casing and the other components are accommodated within it. The components disposed within the endless polishing cloth can conveniently be accommodated in their own casing, forming an inner casing and framework for the components and around which the polishing cloth is fitted. This inner casing is conveniently provided with removable sections for access to the batteries and polish container.

A polish applicator 25 is provided which comprises a piece of sponge or similar material 27 secured to a flexible carrier plate 29. The flexible carrier plate 29 is mounted on a guide member 31 having two arms which are journaled for pivotal movement with respect to the housing about an axis aligned with, and rearwardly of the axis of the cylindrical member 5 of the polishing head 3. The flexible carrier plate is conveniently rectangular and slidably receivable in a slot in the housing. A lever 33 is secured to the flexible carrier plate and protrudes through a longitudinal slot 35 in the housing. Movement of the lever along the

slot controls movement of the flexible carrier plate and hence the polish applicator between a withdrawn position and an extended position. In the extended position the guide member 31 constrains the flexible carrier plate to adopt a curved path around the polishing head 3, in which position the sponge like material 27 lies radially outwardly of the polishing head 3. In the withdrawn position the polishing applicator is withdrawn into the housing to expose the polishing head 3.

A switch 52 is disposed within the housing and controls the operation of the electric motor which reciprocates the polishing head 3. In the fully withdrawn position of the polish applicator 25, the switch is actuated to turn on the motor. The flexible carrier plate 29 is arranged to actuate the switch.

A passageway 37 incorporating a oneway valve 38 connects with the sponge like material 27 of the polish applicator and leads from a reservoir 39. The reservoir 39 holds a quantity of liquid polish and accommodates a plunger 41 which is actuated by a push rod 43 which projects from the housing. Conveniently, the reservoir is set transversely in the housing with the push rod 43 projecting from the side of the housing.

The container for polish 17 mentioned above is connected to the reservoir 39 by way of a one way valve 45. Actuation of the push rod 43 causes polish to be dispensed from the reservoir 39 down the passageway 37 to the material 27 of the polish applicator. On release of the push rod 43 it returns under the action of a return spring and on the return stroke polish is drawn into the reservoir 39 from the container 17. An air valve is conveniently provided on the polish container to allow air in and so avoid the generation of a vacuum therein and associated suck back of polish.

In operation then, the lever 33 controlling the polish applicator is moved forward towards the polishing head 3 so that the material 27 projects from the housing and is located radially outwardly of the polishing head. The push rod 43 is actuated to dispense polish to the material 27 which is then applied to the shoe or like article which is to be cleaned. When polish has been applied to the article, and further polish may be required to complete the application, the polish applicator is moved to its fully withdrawn position to initiate operation of the motor 11. This reciprocates the polishing head 3 and by virtue of the cloth being received between the guides 51 on the polishing head, the motion of the polishing head is transmitted to the polishing cloth 19 to thereby impart a rubbing motion for buffing up the polish previously applied. The resilient mounting of the polishing head and the use of a cylindrical member 5 enable intricate shapes to be cleaned and polished.

After polishing, the lever 33 is moved from its

fully withdrawn position to break the electrical connection to the motor. In this position it is preferred that the polish applicator is still accommodated within the housing but as an alternative an end cap may be provided which fits over the polish head to prevent inadvertent soiling of other articles with which the apparatus might otherwise come into contact. The cloth may be moved on to a clean section as and when required.

It will be appreciated that the apparatus is of small construction and as such is readily portable and ideally suited as an accessory to overnight luggage in place of the traditional shoe cleaning kit of brushes and polish.

Referring now to Figs. 4 and 5 which illustrate another embodiment of apparatus according to the present invention. The modifications and additional features described with reference to Figs. 4 and 5 may be incorporated in the embodiment of Figs. 1 to 3. In Figs. 4 and 5 like reference numerals have been used to denote those parts which are common to Figs. 1 to 3.

The first modification concerns a revised container 17' for holding the polish and the provision of an externally accessible filler connection 51. The container is preferably made of a transparent material in order to enable the quantity of polish in the container to be checked visually. To enable this to be done without dismantling the apparatus, the casing 1 of the apparatus is provided with a window 53 made of transparent material, such as a plastic material, or glass, which lies adjacent the side of the container. The filler connection 51 comprises a sleeve 55 which is open at one end and accessible from the exterior of the apparatus casing by way of an aperture 57 in the casing. The sleeve contains an axially movable valve member 59 which conveniently comprises a resilient sealing member and which is urged into a position which seals the container by a spring 61. The sleeve has an opening or openings 63 in the wall thereof which communicate with the interior of the container. When it is required to fill the container, the nozzle of a polish refill is inserted into the sleeve so as to displace the valve member 59 axially past the openings 63 so allowing polish to be introduced into the container from the polish refill conveniently by squeezing the refill. On removal of the nozzle the valve member closes off the filler connection under the action of the spring.

The container 17' leads to a reservoir 39 incorporating a plunger 41 for dispensing polish to the polish applicator as described with reference to Figs. 1 to 3. A one way valve 65 is disposed between the reservoir and container to prevent polish passing from the reservoir to the container.

An additional feature illustrated in Figs. 4 and 5 is the provision of a welt polisher 67.

This comprises a transverse bar which is con-

veniently covered, for example over three sides, with a strip of cloth 69. Each end of the bar carries a leg 71 which extends into the apparatus and is connected to the actuating plate 7 which is oscillated by the drive mechanism. This serves to oscillate transversely the bar of the welt polisher 67 which because of its narrow configuration is ideal for polishing areas such as those adjacent the welt. As an alternative to covering the bar with cloth it may comprise a row of bristles forming a brush.

A suede brush attachment 73 may be provided to clip onto the polishing head for treating suede shoes. This comprises an elongate bar 75 with turned over ends 77 which clip onto the polishing head 3. One or more rows of bristles 79 are secured to the elongate bar 75.

CLAIMS

1. An apparatus for cleaning and polishing shoes or the like article comprising a housing having projecting from one end a polishing head, and drive means to oscillate the polishing head.

2. An apparatus as claimed in claim 1 further comprising a reservoir for polish, and means for dispensing the polish on to an applicator for application to the article to be cleaned.

3. An apparatus as claimed in claim 1 or 2 in which the polishing head is resiliently mounted onto an actuating plate which is reciprocable.

4. An apparatus as claimed in claim 3 in which the polishing head is cylindrical with a semi-circular cross section and is reciprocable in a direction parallel to the longitudinal axis of the polishing head.

5. An apparatus as claimed in any of claims 1 to 4 in which an electric motor is employed to reciprocate the polishing head.

6. An apparatus as claimed in any of claims 1 to 5 in which a polishing cloth fits over the polishing head.

7. An apparatus as claimed in claim 6 in which the polishing head has a recess to receive the cloth and defining guide shoulders to locate the cloth in the transverse direction.

8. An apparatus as claimed in claim 6 or 7 in which the polishing cloth is formed as an endless band which passes around the polishing head and at least one or more additional rollers or guides disposed within a housing of the apparatus.

9. An apparatus as claimed in claim 8 in which one of the rollers around which the polishing cloth passes is rotatable by means of a knob which projects from the housing and which serves to advance the polishing cloth.

10. An apparatus as claimed in claim 2 and any of claims 3 to 9 when appendent on claim 2 in which the applicator comprises a sponge like material secured to a flexible plate

which is guided for movement over the polishing head and for withdrawal into the housing.

11. An apparatus as claimed in claim 10 in which the flexible plate has secured thereto an
- 5 actuating lever and a pair of guide arms, which guide arms are pivotally mounted on the housing and constrain the flexible plate to move arcuately, radially outwardly of the polishing head and polishing cloth.
- 10 12. An apparatus as claimed in claim 10 or 11 in which movement of the applicator controls the operation of the drive means by co-operation with switch means.
13. An apparatus as claimed in claim 2 or
- 15 any claim appendent thereon in which a plunger is disposed within the reservoir and is operable by a piston rod which projects from the housing of the apparatus to displace polish onto the applicator by way of a communicating passage.
- 20 14. An apparatus as claimed in claim 13 in which the reservoir is fed with polish from a polish container accommodated within the housing.
- 25 15. An apparatus as claimed in claim 14 in which the container has a filler connection which is accessible by way of an aperture in the apparatus housing.
16. An apparatus as claimed in any preceding claim further comprising an oscillatable
- 30 welt polisher projecting from the housing and oscillated by the drive means with which it is connected.
17. An apparatus as claimed in claim 14 in
- 35 which the housing has a transparent window aligned with the polish container for inspection purposes.
18. An apparatus for polishing shoes or the like constructed and arranged and adapted to
- 40 operate substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.